

REMARKS

Claims 1-11, 15, 19, 20 and 22 have been examined, and claims 12-14, 16-18 and 21 have been withdrawn from consideration. Claims 1-5, 10, 11, 15, 19, 20 and 22 have been rejected under 35 U.S.C. § 103(a) and under the judicially created doctrine of obviousness-type double patenting. Also, the Examiner has indicated that claims 6-9 contain allowable subject matter.

I. Preliminary Matters

As a preliminary matter, the Examiner has withdrawn claim 21 from consideration, as being dependent on various non-elected claims. However, Applicant has amended claim 21 so that it properly depends from claims elected for prosecution. Therefore, Applicant submits that claim 21 should not be withdrawn.

II. Rejection under 35 U.S.C. § 103(a) over EP 0 976 560 A2 to Shimada et al. (“Shimada”) in view of EP 0 903 234 A2 to Furuhashi et al. (“Furuhashi”).

The Examiner has rejected claims 1-5, 10, 11, 15, 19, 20 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Shimada in view of Furuhashi.

A. Claim 1

Applicant submits that the combination of Shimada and Furuhashi fail to render claim 1 unpatentable. For example, claim 1 recites an electrode wiring drawn out of an upper electrode which is provided only on one end portion of a pressure generating chamber, and a protection layer provided only on the other end portion of the pressure generating chamber.

The Examiner acknowledges that Shimada fails to disclose the claimed protection layer, but contends that Furuhashi does. In particular, the Examiner maintains that insulating layer 90 discloses the claimed protection layer. However, as stated in claim 1, an electrode wiring (lead electrode) is provided only on one end portion of the pressure generating chamber, while a protective layer is provided only on the other end portion. As shown in Fig. 4B of Furuhashi, layer 90 and lead electrode 100 are not provided only in the respective end portions. Rather, it appears that lead electrode 100 is formed on layer 90. As stated in the reference, contact hole 90a is formed in layer 90 to connect lead electrode 100 to upper electrode film 80 (col. 13, line 58-col. 14, line 4). In addition, layer 90 appears to be formed as a single, insulating layer which covers the entire bottom of upper electrode film 80, the side of piezoelectric film 70, as well as a plurality of pressure generating chambers 12 (Fig. 2A, 4C; col. 13, lines 53-56). Therefore, such layer fails to be provided only in an end portion of a pressure generating chamber for protection of a vibrating plate, as required by claim 1.

Further, the Examiner refers to Fig. 2A as showing that lead electrode 100 is on one end, and layer 90 is formed on the other end (pg. 7 of Office Action). However, as stated above, claim 1 requires that the protection layer be provided only in the respective other end portion of the pressure generating chamber. As shown in Fig. 2A, the alleged protection layer 90 extends to the opposite end of the device in order to contact with lead electrode 100. Therefore, the alleged protection layer 90 is not formed only in the “other” end portion, as recited in claim 1.

Accordingly, since Furuata fails to cure the deficient teaching of Shimada, Applicant submits that claim 1 is patentable over the cited references, and respectfully requests the Examiner to reconsider and withdraw the rejection.

B. Claims 2-5, 10, 11, 15, 19, 20 and 22

Since claims 2-5, 10, 11, 15, 19, 20 and 22 are dependent, either directly or indirectly, on claim 1, Applicant submits that such claims are patentable at least by virtue of their dependency.

V. Double Patenting Rejection

Claims 1-5, 10, 11, 15, 19, 20 and 22 have been rejected under the provisionally created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 5-8 and 12 of co-pending Application No. 09/977,380, in view of Furuata. However, as stated above, Furuata fails to teach or disclose the claimed protection layer.

Accordingly, Applicant respectfully requests the Examiner to withdraw the double patenting rejection. In addition, due to their dependency on claim 1, Applicant respectfully requests the Examiner to withdraw the double patenting rejection on claims 2-5, 10, 11, 15, 19, 20 and 22.

VI. Allowable subject matter

Applicant thanks the Examiner for indicating that claims 6-9 contain allowable subject matter.

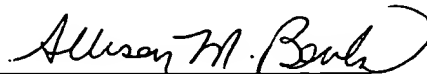
Amendment under 37 C.F.R. § 1.116
U.S. Application No. 09/977,197

VII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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